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of that Sickness, she nursed a Male Child, who is yet alive, and one of our Faculty; from whom I have this Relation.

This History will afford occasion to divers Speculations; which I will not attempt to anticipate, but refer them to the Royal Society. I am, &c.

JAMES YONGE.

XXV. *The Description of a Tartarian Plant, call'd Gin-seng; with an Account of its Virtues. In a Letter from Father Jartoux, to the Procurator General of the Missions of India and China. Taken from the Tenth Volume of Letters of the Missionary Jesuits, Printed at Paris in Octavo, 1713*

Peking, April 12. 1711.

Reverend Father,

THE Map of *Tartary*, which we made by Order of the Emperor of *China*, gave us an Opportunity of seeing the famous Plant *Gin-seng*, so much esteem'd in *China*, and so little known in *Europe*. Towards the end of *July* 1709. we arrived at a Village not above four small Leagues distant from the Kingdom of *Corea*, which is inhabited by those *Tartars* called *Calca tatze*. One of these *Tartars* went and found upon the Neighbouring Mountains four Plants of the *Gin-seng*, which he brought us entire in a Basket: I took one of them, and designed it, in its exact Dimensions as well as I could

could possible do it ; the Figure of which I here send you, and shall give you the Explanation of it at the end of this Letter.

The most eminent Physicians in *China* have writ whole Volumes upon the Virtues and Qualities of this Plant ; and make it an Ingredient in almost all Remedies which they give to their chief Nobility ; for it is of too high a Price for the common People. They affirm, that it is a Sovereign Remedy for all Weaknesses occasion'd by excessive Fatigues either of Body or Mind ; that it dissolves Puitous Humours ; that it cures Weakness of the Lungs and the Pleurisy ; that it stops Vomiting ; that it strengthens the Stomach and helps the Apperite ; that it disperses Fumes or Vapours ; that it fortifies the Breast, and is a Remedy for short and weak Breathing ; that it strengthens the Vital Spirits, and increases Lymph in the Blood ; in short, that it is good against Dizziness of the Head and Dimness of Sight, and that it prolongs Life in old Age.

No Body can imagine that the *Chinese* and *Tartars* would set so high a Value upon this Root, if it did not constantly produce a good Effect. Those that are in Health often make use of it to render themselves more vigorous and strong : And I am perswaded that it would prove an excellent Medicine in the Hands of any *European* who understands Pharmacy, if he had but a sufficient quantity of it to make such Tryals as are necessary, to examine the Nature of it Chymically, and to apply it in a proper quantity according to the Nature of the Disease for which it may be beneficial.

It is certain that it subtilizes, increases the motion of, and warms the Blood ; that it helps Digestion, and invigorates in a very sensible manner. After I had designed the Root, which I shall hereafter describe, I observed the state of my Pulse, and then took half of the Root, raw as it was and unprepar'd : In an Hour after I found

found my Pulse much fuller and quicker ; I had an Appetite, and found my self much more vigorous, and could bear Labour much better and easier than before.

But I did not rely on this Trial alone, imagining that this Alteration might proceed from the Rest that we had that Day : But four Days after, finding myself so fatigued and weary that I could scarce set on Horse back, a Mandarin who was in company with us perceiving it, gave me one of these Roots: I took half of it immediately, and an Hour after I was not the least sensible of any weariness. I have often made use of it since, and always with the same Success. I have observed also, that the green Leaves, and especially the Fibrous part of them chewed, would produce nearly the same effect.

The *Tartars* often bring us the Leaves of *Gin-seng* instead of Tea ; and I always find myself so well afterwards, that I should readily prefer them before the best Tea. Their Decoction is of a grateful Colour ; and when one has taken it twice or thrice, its Taste and Smell become very pleasant.

As for the Root of this Plant, it is necessary to boyl it a little more than Tea, to allow time for extracting its Virtue ; as is practised by the *Chinefe* when they give it to sick Persons, on which occasion they seldom use more than the fifth part of an Ounce of the dried Root. But as for those that are in Health, and take it only for Prevention, or some slight Indisposition, I would advise them not to make less than Ten Doses of an Ounce, and not to take of it every Day. It is prepared in this manner ; The Root is to be cut into thin Slices, and put into an Earthen Pot well glazed, and filled with about a quarter of a Pints of Water *Paris Measure* : The Pot must be well covered, and set to boyl over a gentle Fire ; and when the Water is consumed to the quantity of a Cupful, a little Sugar is to be mixt with it, and it is to be drank immediately. After this, as much more
Water

Water is to be put into the Pot upon the remainder, and to be boyled as before, to extract all the Juice and what remains of the spirituous part of the Root. These two Doses are to be taken, one in the Morning, and the other at Night.

As to the Places where this Root grows, because you will see them marked in the new Map of *Tartary*, a Copy of which we shall send into *France*, I shall only observe here in general, that it is between the thirty ninth and forty seventh Degree of Northern Latitude, and between the tenth and twentieth Degree of Eastern Longitude, reckoning from the Meridian of *Peking*. There is there a long Tract of Mountains, which the thick Forests, that cover and encompass them, render almost unpassable. It is upon the declivities of these Mountains and in these thick Forests, upon the Banks of Torrents or about the Roots of Trees, and amidst a thousand other different sorts of Plants, that the *Gin-seng* is to be found. It is not to be met with in Plains, Vallies, Marshes, the bottoms of Rivulets, or in Places too much exposed and open. If the Forest take Fire and be consumed, this Plant does not appear till two or three Years after : It also lies hid from the Sun as much as possible ; which shews that Heat is an Enemy to it. All which makes me believe, that if it is to be found in any other Country in the World, it may be particularly in *Canada*, where the Forests and Mountains, according to the relation of those that have lived there, very much resemble these here.

The Places where the *Gin-seng* grows are on every side separated from the Province of *Quan-long* (which in our old Maps is called *Leaotum*) by a Barrier of wooden Stakes which encompasses this whole Province, and about which Guards continually patroll to hinder the *Chinese* from going out and looking after this Root. Yet how vigilant soever they are, their greediness after Gain incites

cites the *Chinefe* to lurk about privately in these Deserts, sometimes to the number of two or three Thousand, at the hazard of losing their Liberty and all the fruit of their Labour, if they are taken either as they go out of or come into the Province.

The Emperor having a mind that the *Tartars* should have the Advantage that is to be made of this Plant rather than the *Chinefe*, gave Orders this present Year 1709. to Ten Thousand *Tartars* to go and gather all that they could of the *Gin-seng*, upon condition that each Person should give his Majesty two Ounces of the best, and that the rest should be paid for according to its weight in fine Silver. It was computed, that by this means the Emperor would get this Year about Twenty Thousand *Chinefe* Pounds of it, which would not cost him above one fourth part of its value. We met by chance with some of these *Tartars* in the midst of those frightful Deserts: And their *Mandarins*, who were not far distant out of our way, came one after another, and offer'd us Oxen for our subsistence, according to the Commands they had received from the Emperor.

This Army of Herbarists observed the following Order. After they had divided a certain Tract of Land among their several Companies, each Company, to the number of an hundred, spreads itself out in a straight Line to a certain fixt place, every Ten of them keeping at a distance from the rest. Then they searched carefully for the Plant, going on leisurely in the same Order; and in this manner in a certain number of Days they run over the whole space of Ground appointed them. When the time is expired, the *Mandarins*, who are encamp'd with their Tents in such Places as are proper for the subsistence of their Horses, send to view each Troop, to give them fresh Orders, and to inform themselves if their Number is compleat. If any one of them is wanting, as it often happens, either by wander-

ing out of the way, or being devoured by wild Beasts, they look for him a Day or two, and then return again to their Labour as before.

These poor People suffer a great deal in this Expedition. They carry with them neither Tents nor Beds, every one being sufficiently loaded with his Provision, which is only Millet parched in an Oven, upon which he must subsist all the time of his Journey. So that they are constrained to sleep under Trees, having only their Branches and Barks, if they can find them, for their Covering. Their *Mandarins* send them from time to time some pieces of Beef, or such Game as they happen to take, which they eat very greedily and almost raw. In this manner these Ten Thousand Men passed six Months of the Year; yet, notwithstanding their fatigues, continued lusty, and seemed to be good Soldiers. The *Tartars*, which were our Guard, did not fare better, having only what remained of an Ox, that was killed every Day, and had first served fifty Persons, for their subsistence.

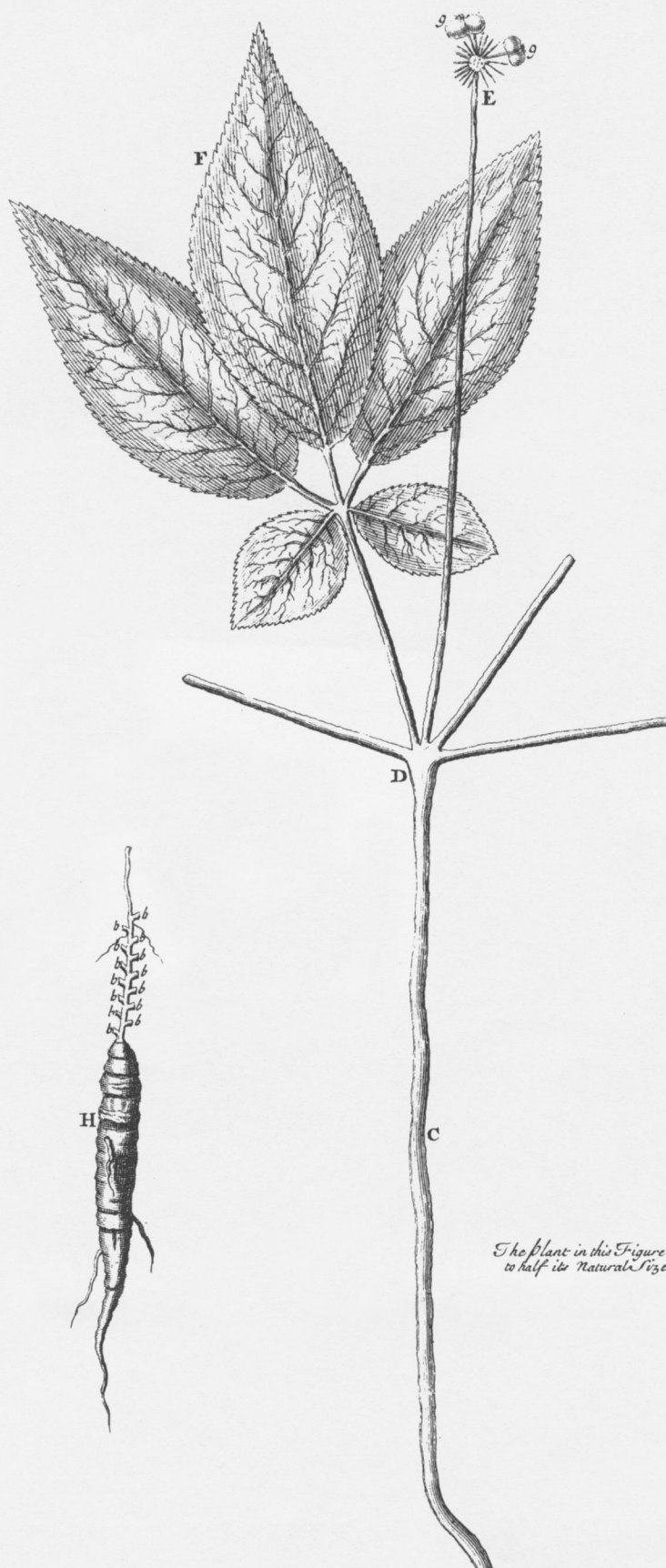
To give you next an Idea of this Plant, which the *Tartars* and *Chinese* put so great a value upon, I shall explain the Figure here sent you, which I drew with the greatest Exactness that was possible.

Tab. V.

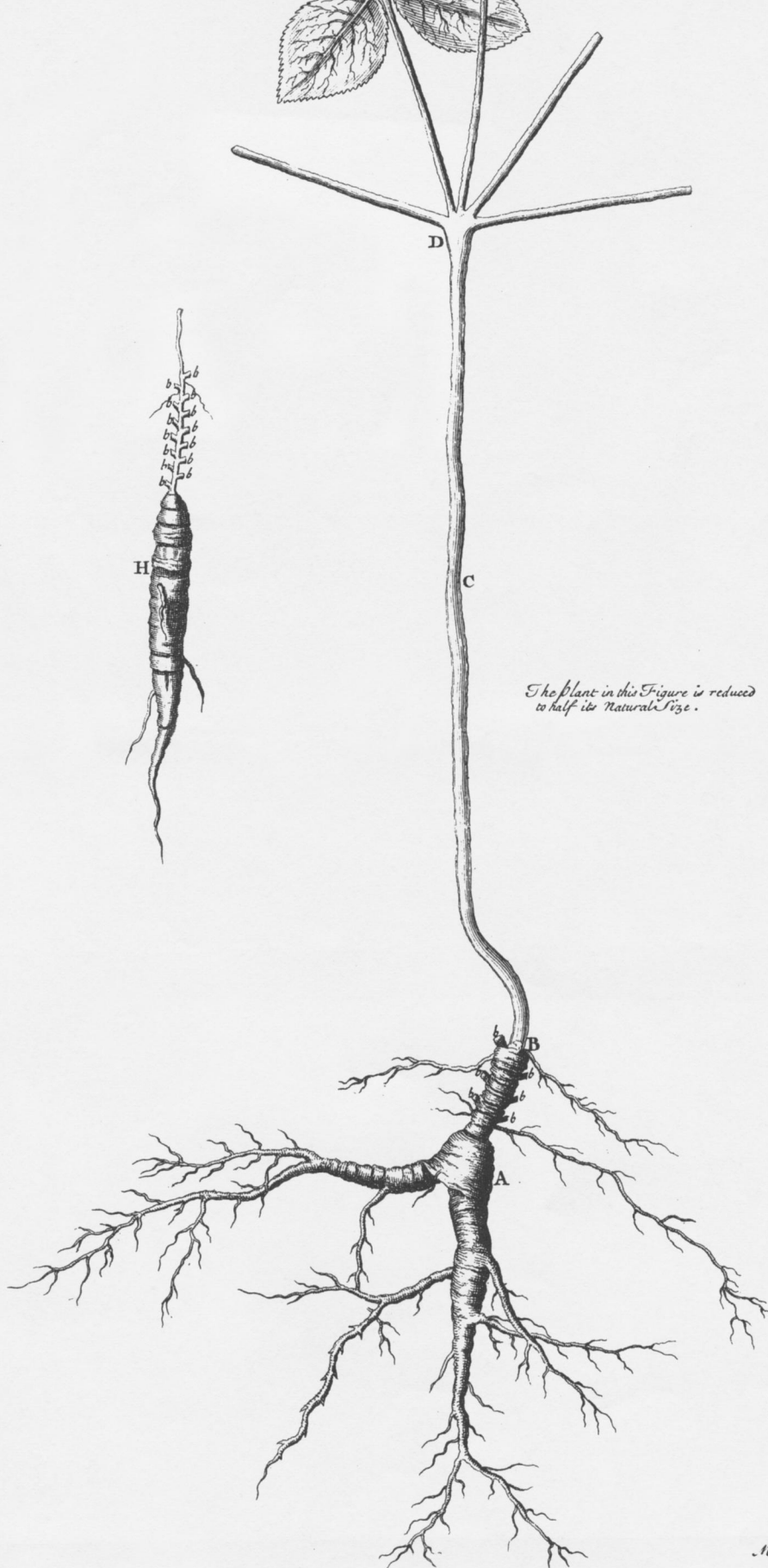
A. Shows the Root of the Plant; which, when wash'd, was white and a little rugged and uneven, as the Roots of other Plants generally are.

B. C. D. represent the Length and Thickness of the Stalk; which is smooth and pretty round, of a deepish red colour, except near its beginning at *B.* where it is whiter, by reason of its nearness to the Ground.

D. is a sort of Knot or Joynt, made by the shooting out of four Branches, which all rise from the same Center, and divide from another at equal distances and at the same height from the Ground. The underside of the Branch is green, mixt with white; the upper
part



The plant in this Figure is reduced
to half its Natural Size.



*The plant in this Figure is reduced
to half its Natural Size.*

part is much like the Stalk, of a deep red, inclining to the colour of a Mulberry. These two Colours gradually decrease and unite together on the sides in a natural mixture. Each Branch has five Leaves, as represented in the Figure. It is remarkable, that these Branches separate from each other at equal distances, as well in respect of themselves as of the Horizon, and make with their Leaves a circular Figure nearly parallel to the Surface of the Ground.

Tho' I have finish'd the design but of half of one of the Leaves at *F*. yet any one may easily conceive and perfect the rest in the same manner. I do not know that ever I saw Leaves so large as these that were so thin and fine: Their Fibres are very distinguishable; and on the upper side they have some small whitish Hairs. The Skin between the Fibres rises a little in the middle above the level of the Fibres. The colour of the Leaf is a dark green above, and a shining whitish green underneath. All the Leaves are serrated, or very finely indented on the Edges.

From *D*. the Center of the Branches, there rises a second Stalk *D. E.* which is very straight and smooth, and whitish from Bottom to Top, bearing a Bunch of round Fruit of a beautiful red Colour. This Bunch was composed of twenty four Berries, two of which I have here drawn, marked *g. g.* The red Skin that covers the Berry is very thin and smooth: It contains within it a white softish Pulp. As these Berries were double (for they are sometimes found single) each of them had two rough Stones, separated from one another, of the size and figure of our common Lentils, excepting that the Stones have not a thin Edge like Lentils, but are almost every where of an equal thickness. Each Berry was supported by a smooth, even, and very fine Sprig, of the colour of those of our small red Cherries. All these Sprigs rose from the same Center, and spreading
 I i 2 exactly

exactly like the Rays of a Sphere they make the Bunch of Berries that they bear of a circular form. This Fruit is not good to eat. The Stone is like the Stones of other common Fruit; it is hard, and incloses a Kernel. It is always placed upon the same Plan or Level with the Sprig that bears the Berry. From whence it is, that the Berry is not round, but a little Flat on each side. If it be double, there is a kind of depression, or hollow Place in the middle, where the two Parts unite. It has also a small Beard at Top, diametrically opposite to the Sprig on which it hangs. When the Berry is dry, there remains only a shrivel'd Skin that sticks close to the Stones, and is then of a dark red or almost black Colour.

This Plant dyes away; and springs again every Year. The number of its Years may be known by the number of Stalks it has shot forth, of which there always remains some Mark; as may be seen in the Figure by the Letters *b. b. b.* &c. From whence it appears that the Root *A.* was seven Years old, and that the Root *H.* was fifteen.

As to the Flower, not having seen it, I can give no Description of it. Some say that it is white and very small: Others have assured me, that this Plant has none, and that no Body ever saw it. I rather believe, that it is so small, and so little remarkable, that they never took Notice of it: And what confirms me in this Opinion is, that those that look for the *Gin-seng*, having regard to and minding only the Root, commonly neglect and throw away all the rest of the Plant as of no use.

There are some Plants, which beside the Bunch of Berries I have described, have also one or two Berries like the former, placed an Inch or an Inch and a half below the Bunch. And when this happens, they say, if any one takes Notice of the Point of the Compass that these Berries direct to, he can't fail of finding the Plant

at some Paces distant that way, or thereabouts. The colour of the Berries, when the Plant has any, distinguishes it from all others, and makes it remarkable at first Sight: But it sometimes happens that it bears none, tho' the Root be very old; as that marked by the Letter *H.* had no Fruit, tho it was in its fifteenth Year.

They having sowed the Seed in vain, without its producing any Plant, might probably give occasion to this Story, which is current among the *Tartars*. They say that a Bird eats it as soon as it is in the Earth, and not being able to digest it, it is purified in its Stomach, and afterwards springs up in the Place where it is left by the Bird with its Dung. I rather believe that the Stone remains a long time in the Ground before it shoots out any Root. And this Opinion of mine seems the more probable, because there are found some Roots, which are not longer and not so big as ones little Finger, tho' they have shot forth successively at least ten Stalks in as many different Years.

Tho' the Plant I have here described had four Branches, yet there are some that have but two, others but three, and some that have five or seven; which last are the most beautiful: Yet every Branch has always five Leaves, as well as this here figured, unless the number has been diminished by any Accident. The Height of the Plants is proportionable to their Bigness and the number of their Branches. Those that bear no Fruit are commonly small and very low.

The Root, the larger and more uniform it is, and the fewer small Strings or Fibres it has, is always the better: On which account that marked with the Letter *H.* is preferable to the other. I know not for what reason the *Chinese* call it *Gin-seng*, which signifies the Representation or Form of Man: Neither I myself, nor others who have searched and inquired into it on purpose, could ever find it had any resemblance to the signification

nification of its Name; tho' among other Roots there may now and then be found some which by accident have very odd Figures. The *Tartars* with more reason call it *Orbota*, which signifies *the Chief of Plants*.

It is not true that this Plant grows in *China*, as Father *Martini* affirms from the Authority of some *Chinese* Books, which make it to grow on the Mountains of *Tong-pinfou* in the Province of *Peking*. They might easily be led into this mistake, because that is the Place where it first arrives when it is brought from *Tartary* into *China*.

Those that gather this Plant preserve only the Root, and bury together in some certain place in the Earth all that they can get of it in ten or fifteen Days time. They take care to wash it well, and cleanse it with a Brush from all extraneous Matter. Then they dip it into scalding Water, and prepare it in the fume of a sort of yellow Millet, which communicates to it part of its Colour. The Millet is put into a Vessel with a little Water, and boyles over a gentle Fire; the Roots are laid upon small transverse pieces of Wood over the Vessel, and are thus prepared, being covered with a Linnen cloath or some other Vessel placed over them. They may also be dried in the Sun, or by the Fire; but then, tho' they retain their Virtue well enough, yet they have not that yellow Colour which the *Chinese* so much admire. When the Roots are dried, they must be kept close in some very dry Place; otherwise they are in danger of corrupting, or being eaten by Worms.

I wish the Description I have here given of the *Ginseng*, so highly esteem'd in this Empire, may please you, and those to whom you shall impart it. We are now going into *Tartary*, to finish the Map of that Country, having still the *West* and *North West* Part of it to do. I will send you as soon as possible

fible the Map of the Province of *Peking*, by Father *Martini* called *Pekeli*, and by the *Chinese Tcheli* or *Lipafou*. I am, &c.

J A R T O U X.

XXVI. *An Examen of the Chalybeat, or Spa-Waters, called by the Germans Acid or Sowre-Brunns, or Fountains; but prov'd to be of a contrary Nature, that is, Alkali's. By Dr. Fred. Slare, Fellow of the Coll. of Physicians and Royal Society.*

I Have, for many Years past, had more than a bare Suspicion, that Physicians and Learned Persons had impos'd upon themselves and others Erroneous Notions about the Nature and Properties of those Mineral Waters, which are of the *Chalybeat* or Iron Species. *Germany* abounds much with these Waters, and they bestow one general Name upon them, and call them *Sowre Brunns*, that is, sower Wells or Springs of Water. The Learned *Germans*, when they name them, or write of them, do call them *Acidule*, ex. *Gr. Spadenses, Smalbaccenses vel Pyromontana*, &c. *Henricus ab Heers* agrees with *Vitruvius*, *Fallopins*, and the Sagacious *Helmont*, and other Men of great Fame, in justifying the Acidity of the several sorts of *Spa* and *Chalibeat* Waters; but, not being satisfied with their Reasons, assigns others; and after a tedious and obscure Harangue, concludes, That they owe their Birth and great Virtues to Vitriol and Sulphur. He observes, that Vitriol and Sulphur are found in the Globe or Earth, from whence these Waters do spring; but yet
does